

WHAT IS CLAIMED IS:

1. A method of transferring data between a plurality of computing environments, each of which includes a plurality of optical sources and an optical detector, said method comprising:

associating a pair of plurality of computing environments with a pair of holographic transform functions, with said pair of holographic transform functions associated with said pair of computing environments differing from the pairs of holographic transform functions associated with the remaining pairs of computing environments of said plurality of computing environments;

producing, with one of said plurality of optical sources of said pair of computing environments, optical energy modulated with data, defining modulated optical energy;

transforming said modulated optical energy with one of said pair of holographic transform functions, defining transformed modulated optical energy;

broadcasting said transformed modulated optical energy into a volume by reflecting said transformed modulated optical energy from a body having a conically shaped body; and

sensing said data with the detector associated with the remaining computing environment of said pair of computing environments.

2. The method as recited in claim 1 wherein sensing said data energy further includes performing an inverse transform on said transformed modulated optical energy, with one of said pair of holographic transform functions associated with said pair of computing environments, before sensing said modulated optical, to retrieve said modulated optical energy.

3. The method as recited in claim 1 wherein broadcasting said transformed modulated optical energy into a volume further includes dispersing said transformed modulated optical energy into said volume by reflecting said transformed modulated optical energy from a reflective surface having a conical shape.

1 4. The method as recited in claim 1 wherein broadcasting said transformed
2 modulated optical energy into a volume further includes propagating a toroidal sheet of
3 transformed modulated optical energy into said volume by reflecting said transformed modulated
4 optical energy from a surface having a hyperbolic shape.

1 5. The method as recited in claim 1 wherein broadcasting said transformed
2 modulated optical energy into a volume further includes radiating said transformed modulated
3 optical energy into said volume over a plurality of directions by reflecting said transformed
4 modulated optical energy from a surface having a plurality of planar regions formed thereon.

1 6. The method as recited in claim 1 wherein one of said pair of computing
2 environments is located in a first building and the remaining computing environments is located
3 in a second building, spaced-apart from said first building.

1 7. The method as recited in claim 1 wherein one of said pair of computing
2 environments is located in a building and the remaining computing environments is located in a
3 vehicle.

1 8. The method as recited in claim 1 wherein one of said pair of computing
2 environments is located in a first vehicle and the remaining computing environments is located in
3 a second vehicle, spaced-apart from said first building.

1 9. A network, comprising:
2 a plurality of computing environments, each of which includes a plurality of
3 optical sources and an optical detector and a dispersive element in optical communication with
4 said plurality of optical sources; and
5 an optical transceiver system in data communication with each of said plurality of
6 computing environments, said optical transceiver system including a plurality of holographic
7 transform functions, each of which is associated with said detector of each of said plurality of
8 computing environments, with said holographic transform function associated with one of the
9 detectors said plurality of computing systems subsystems differing from the holographic
10 transform functions associated with the detectors of the remaining computing environments of
11 said plurality of computing environments.

1 10. The network as recited in claim 9 wherein said dispersive element further
2 includes a body having a reflective exterior surface with a conical shape.

1 11. The network as recited in claim 9 wherein said dispersive element further
2 includes a body having a reflective exterior surface with a hyperbolic shape.

1 12. The network as recited in claim 9 wherein said dispersive element further
2 includes a body having a reflective exterior surface with a plurality of planar regions formed
3 thereon.

1 13. The network as recited in claim 9 wherein one of said pair of computing
2 environments is located in a first building and the remaining computing environments is located
3 in a second building, spaced-apart from said first building.

1 14. The network as recited in claim 9 wherein one of said pair of computing
2 environments is located in a building and the remaining computing environments is located in a
3 vehicle.

1 15. The network as recited in claim 9 wherein one of said pair of computing
2 environments is located in a first vehicle and the remaining computing environments is located in
3 a second vehicle, spaced-apart from said first building.

1 16. A network, comprising:
2 a plurality of computing environments, each of which includes a plurality of
3 optical sources and an optical detector and a dispersive element in optical communication with
4 said plurality of optical sources;
5 means for associating a pair of plurality of computing environments with a pair of
6 holographic transform functions, with said pair of holographic transform functions associated
7 with said pair of computing environments differing from the pairs of holographic transform
8 functions associated with the remaining pairs of computing environments of said plurality of
9 computing environments;
10 means for producing, with one of said plurality of optical sources of said pair of
11 computing environments, optical energy modulated with data, defining modulated optical
12 energy;
13 means for transforming said modulated optical energy with one of said pair of
14 holographic transform functions, defining transformed modulated optical energy;
15 means for broadcasting said transformed modulated optical energy into a volume
16 by reflecting said transformed modulated optical energy from a body having a conically shaped
17 body; and
18 means for sensing said data with the detector associated with the remaining
19 computing environment of said pair of computing environments.

1 17. The network as recited in claim 16 wherein said means for sensing further
2 includes means for performing an inverse transform on said transformed modulated optical
3 energy, with one of said pair of holographic transform functions associated with said pair of
4 computing environments. 18. The network as recited in claim 16 wherein said means for
5 broadcasting further includes means for reflecting transformed modulated optical energy from a
6 reflective surface to disperse said transformed modulated optical energy into said volume.

1 19. The network as recited in claim 16 wherein said means for broadcasting
2 further includes means for reflecting transformed modulated optical energy from a reflective
3 surface to propagate a toroidal sheet of transformed modulated optical energy into said volume.

1 20. The network as recited in claim 16 wherein said means for broadcasting
2 further includes means for reflecting transformed modulated optical energy from a reflective
3 surface to radiate said transformed modulated optical energy into said volume over a plurality of
4 directions.

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